

REMARKS

Claims 1-3 are amended, no claims are canceled, and claims 21-22 are added; as a result, claims 1-22 are now pending in this application.

Claim 1 was amended to clarify the language of the claim. Specifically, the amendment to claim 1 included deletion of the phrase "and/or" from the claim. Claim 1 was not amended in response to any rejection in the Office Action, including any rejections based on any references cited in the Office Action. Claims 2 and 3 were amended to rewrite each of these claims in independent form, including all of the elements included in the base claim and any intervening claims from which these claims previously depended. No new matter has been added through the amendments to claims 1-3.

Support for new claims 21-22 can be found in the specification, for example and not by way of limitation, on page 4, line 16 through page 5, line 2. No new matter has been added through the addition of new claims 21-22.

§102 Rejection of the Claims

35 U.S.C. § 102(b) Rejection of claims 15 and 17-20 (Yoshimura)

Claims 15 and 17-20 were rejected under 35 U.S.C. § 102(b) as being anticipated by Yoshimura (U.S. 5,629,642). Applicant respectfully traverses the rejection of claims 15 and 17-20.

Elements recited in independent claim 15 are missing from Yoshimura

Claim 15 recites, "producing a substantially noise free current signal." [Emphasis Added] In contrast, Yoshimura concerns a constant voltage generator, wherein at column 6, lines 24-25 Yoshimura states, "FIG. 8 is a circuit diagram of the second constant voltage generator 19 in the slewing rate detector 8 shown in FIG. 2." [Emphasis Added] Further, at column 6, lines 35-41 Yoshimura states,

This circuit is similar to that of the first generator 18, and a difference between the voltages V1 and V2 can be provided at a high precision irrespective of temperature and power supply voltage. It is a feature that a capacitor is not used in contrast to the first generator 18, and this makes it hard for

the second generator 19 to be affected by change in power supply voltage. In the first generator 18 shown in FIG. 2, a voltage drop at the resistor 13 assures a voltage difference between V1 and V2. [Emphasis Added]

Thus, Yoshimura concerns using a constant voltage generator to maintain a difference in voltages and the affect of change in power supply voltage on the that difference in voltages. A voltage generator circuit is not a circuit for producing a current signal, and persons of ordinary skill in the art would not recognize a constant voltage generator as providing a substantially noise free current signal. Thus, Yoshimura fails to teach producing a substantially noise free current signal as recited in claim 15 by a disclosure of a constant voltage generator.

Why Ohm's Law does not work for the arguments presented in the Office Action.

Applicant maintains the above argument. Applicant's representatives believe the Office Action's explanation on page 5 of why Yoshimura discloses the elements recited in claim 15 is not supported by a proper analysis of electrical properties. The Office Action on page 5 under the heading "Response to Arguments" states,

Applicant argues that Yoshimura produces a constant voltage not a substantially noise free signal as called for in claim 15 is not persuasive. By Ohm's law $V=IR$ there is constant association with a constant associated with a constant voltage generated by the voltage generator 19 of Yoshimura. Since the current is constant thus it is noise free signal. Therefore, the limitation of noise free current is also met.

Applicant respectfully disagrees. Ohm's Law applies to direct current circuits, and does not contemplate such physical parameters as frequency or phase. Persons of ordinary skill in the art would recognize that noise signals may contain signals including one or more frequencies, phases, and amplitudes that are more characteristic of an alternating current signal, and which are not defined in or contemplated by Ohm's Law.

Further, a constant voltage generator may still include a noise signal that is incident to the intended output of a constant voltage generator. Applicant's representatives fail to find in Yoshimura a description of a "noise free" voltage generator. Further, any disclosure of a

constant voltage generator in Yoshimura still fails to disclose "producing a substantially noise free current signal" as recited in claim 15. Thus, Yoshimura fails to disclose all of the elements recited in claims 15.

Ohm's law pertains to a static rule, where voltage and current are related to resistance at any given instant in time. In contrast, signals that include for example a frequency, phase, or amplitude that shift over time, as may be included in a noise signal, are described using dynamic rules that include physical parameters, such as impedance, that are not contemplated by Ohm's Law. Impedance is related to inductance, capacitance, and time, all of which are not contemplated by Ohm's Law. Because the same physical parameters do not apply to static rules as dynamic rules, Ohm's Law fails to address the issues included in the definition and regulation of dynamic signals, such as noise signals. Further, when dealing with dynamic signals such as noise signals, regulation of a constant current includes different conditions than those included in the regulation of a constant voltage. A mere recitation Ohm's Law clearly fails to equate constant voltage regulation with constant current regulation in a circuit or system which includes dynamic signals, such as noise signals.

Further, claim 15 also recites, "processing the substantially noise free current signal and the one or two power supply signals to detect a noise signal in the one or two power supply signals." In contrast, Yoshimura at column 3, lines 24-34 recites,

The second generator 19 generates a second constant voltage V2 which is somewhat smaller than the first voltage V1 when the first voltage V1 is stable, and supplies it to another input of the comparator 20. The first voltage V1 has AC coupling through the capacitor 17 to the power supply line, while it is affected by noises in the power supply line. Then, the comparator 20 compares the first voltage V1 with the second constant voltage V2 insulated electrically from the power supply line in order to detect noises. The output of the comparator 20 is sent to the signal holding circuit 26. [Emphasis Added]

Thus, Yoshimura is concerned with comparing a first voltage V1 with a second constant voltage V2, and so fails to teach comparing a substantially noise free current signal with power supply signals as recite in claim 15.

For at least the reasons stated above, Applicant submits that the Office Action fails to state a *prima facie* case of anticipation with respect to claim 15. Therefore, Applicant

respectfully requests withdrawal of the rejection of claim 15 and reconsideration and allowance of all claims.

Elements recited in dependent claims 17-20 are missing from Yoshimura

Claims 17-20 are dependent on claim 15, and therefore include all the elements recited in claim 15. For example, claim 15 recites, "producing a substantially noise free current signal," and further, "processing the substantially noise free current signal and the one or two power supply signals to detect a noise signal in the one or two power supply signals." Yoshimura fails to teach these elements, and so fails to teach each of the elements of claims 17-20.

In addition other elements recited in dependent claims 17-20 are not taught by Yoshimura. For example, claim 17 recites, "receiving two voltage signals having different polarities." Fig. 2 of Yoshimura shows only one voltage supply, namely Vcc. Applicant submits that ground is not a voltage supply having a different polarity, and so Fig. 2 of Yoshimura, as relied on in the Office Action on page 2, fails to teach "receiving two voltage signals having different polarities" as recited in claim 17.

In another example, claim 18 recites, "comparing the one or two power supply signals to the substantially noise free current signal." As noted above, Yoshimura at column 3, lines 24-34 concerns comparing two voltage signals, but fails to teach "comparing one or two power supply signals to a substantially noise free current signal," as recited in claim 18.

For at least the reasons stated above, Applicant submits that the Office Action fails to state a *prima facie* case of anticipation with respect to claims 17-20. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 17-20 and reconsideration and allowance of all claims.

35 U.S.C. § 102(b) Rejections of claims 1, and 15-20 (Uchimura et al.)

Claims 15 and 17-20 were rejected under 35 U.S.C. § 102(b) as being anticipated by Uchimura et al. (U.S. 4,622,480). Claims 1 and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Uchimura et al. (U.S. 4,622,480). Applicant respectfully traverses the rejection of claims 1 and 15-20.

Elements recited in independent claims 1, 15, and 16 are missing from Uchimura et al.

Claim 1 recites, "a reference current source to provide a substantially noise free differential current signal; and a detector coupled to one or two power supplies, the detector to receive the substantially noise free differential current signal." Claim 15 recites, "producing a substantially noise free current signal," and further, "processing the substantially noise free current signal and the one or two power supply signals to detect a noise signal in the one or two power supply signals." Claim 16 recites, "receiving a substantially noise free current signal," and further, "processing the substantially noise free current signal and the one or two power supply signals to detect a noise signal in the one or two power supply signals."

The Office Action relies on Figure 7 of Uchimura et al. as disclosing these elements. Applicant respectfully disagrees. As shown in FIG. 7 of Uchimura et al., the Noise Detector 73 receives a V_{BIN} signal from the current regulation bias circuit 74. The V_{BIN} signal is described in Uchimura et al. at column 8, lines 41-43 which states, "Therefore, a voltage V_{BIN} corresponding to a variation in the power supply voltage appears at an output 79 of the regulation bias circuit 74." Thus, Uchimura et al. describes applying a voltage corresponding to a variation in the power supply voltage to a noise detector, but fails to disclose a substantially noise free differential current signal, and fails to disclose receiving and processing a substantially noise free differential current signal as recited in claims 1, 15, and 16 as quoted above. Thus, Uchimura et al. fails to disclose all of the elements recited in claims 1, 15, and 16.

Elements recited in dependent claims 17-21 are missing from Uchimura et al.

Claims 17-20 depend from claim 15, and therefore include all of the elements recited in claim 15. Further, new claim 21 depends from claim 1, and includes all of the elements recited in claim 1. For reasons analogous to those stated above with regards to claims 1 and 15, Uchimura et al. fails to disclosure all of the elements included in claims 17-21.

For at least the reasons stated above, Applicant submits that the Office Action fails to state a *prima facie* case of anticipation with respect to claims 1 and 15-20. Therefore, Applicant respectfully requests withdrawal of the rejections of claims 1 and 15-20, and reconsideration and allowance of all claims.

§103 Rejection of the Claims

35 U.S.C. § 103(a) Rejection of claims 1, and 5-14 (Uchimura et al.)

Claims 5-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchimura et al. (U.S. 4,622,480). Applicant respectfully traverses the rejection of claims 5-14.

Elements recited in claims 5-14 are missing from Uchimura et al.

Claim 5 recites, "a plurality of reference current sources formed on a substrate, each of the plurality of reference current sources to provide a substantially noise free differential current signal; and a plurality of detectors formed on the substrate, each of the plurality of detectors coupled to one or two power supplies, each of the plurality of detectors to receive the substantially noise free differential current signal and to detect a noise signal on the one or two power supplies and to generate a noise detection signal to indicate detection of the noise signal." [Emphasis Added].

As noted above, Uchimura et al. in Figure 7 depicts the noise detector 73 receives a V_{BIN} signal from the current regulation bias circuit 74. As also stated above, the V_{BIN} signal is described in Uchimura et al. at column 8, lines 41-43 as, "Therefore, a voltage V_{BIN} corresponding to a variation in the power supply voltage appears at an output 79 of the regulation bias circuit 74." Thus, Uchimura et al. describes applying a voltage corresponding to a variation in the power supply voltage to a noise detector 73.

Hence, Uchimura et al. fails to disclose a plurality of reference current sources, each of the plurality of the reference current sources to provide a substantially noise free differential current signal, and a detector to receive the substantially noise free differential current signal, as recited in claim 5 as quoted above, and so Uchimura et al. fails to disclosure all of the elements recited in claim 5.

The Office Action on pages 4 admits that Uchimura et al. fails to show a plurality of reference current sources and a plurality of detectors as recited in claims 5-14. The Office Action on pages 4-5 states,

However, one skilled in the art would have been recognized that Uchimura et al. power supplies detection circuit can be expanded by duplicating a plurality of each reference current circuit and

power supplies detector circuit. Such expansion is seen as an obvious modification to one skilled in the art for sensing plurality of power supplies.

Further, on page 5, the Office Action states, "Regarding claims 6-14, the limitations recited therein are seen to be inherently present in Uchimura et al."

Applicant respectfully disagrees with all of these statements and submits that since the Office Action does not cite any additional references in support of these statements, the Office Action is taking official notice of these elements included in claims 5-14 and not disclosed in Uchimura et al. Applicant traverses the taking of official notice and requests that the Examiner provide a reference or references that describe the elements not disclosed in Uchimura et al. If the Examiner cannot provide such a reference, Applicant requests that the Examiner submit an affidavit as required by MPEP § 2144.03. If the Examiner cannot provide an affidavit, Applicant requests withdrawal of the rejection and reconsideration and allowance of claims 5-14.

For at least the reasons stated above, Applicant submits that the Office Action fails to state a *prima facie* case of obviousness with respect to claims 5-14. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 5-14 and reconsideration and allowance of all claims.

Allowable Subject Matter

Claims 2-4 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant has rewritten claims 2 and 3 in independent form, including all of the limitations of the base claims and any intervening claims. Further, claim 4 depends from claim 3, and new claim 22 depends from claim 2. Applicant respectfully requests withdrawal of the objection, and allowance of claims 2-4 and new claim 22.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/731,393

Filing Date: December 9, 2003

Title: POWER SUPPLIES NOISE DETECTOR FOR INTEGRATED CIRCUITS

Assignee: Intel Corporation

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Dkt: 884.A83US1 (INTEL)

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 371-2132) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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